

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-13 are pending in the application, with 1 and 13 being the independent claims.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 112

Claims 5-12 have been rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the invention was filed, had possession of the claimed invention.

In particular, the Examiner has identified that claims 5-8 and 10 recite the limitation "further comprising the step of applying the voltage at a magnitude of equal to or greater than two times the operational supply voltage," which raises new matter. The Examiner has alleged that nowhere in the specification do the inventors describe or support such claimed limitation.

Paragraph 25 of the Application has been amended to include the following statement: "In one embodiment, a voltage at a magnitude of equal to or greater than two times the operational supply voltage is applied." This statement does not introduce new subject matter in that this statement was included in claims 5, 6, 7, 8,

and 10 of the Application, as originally filed. In establishing a disclosure, an applicant may rely not only on the description and drawing as filed but also on the original claims. MPEP § 608.01(l). The amendments to the specification have accommodated this rejection for claims 5-8, 10. Reconsideration and withdrawal of the 35 U.S.C. § 112, first paragraph, rejection is respectfully requested.

Additionally, the Examiner has identified that claims 9 and 11-12 recite the limitation "further comprising the step of performing step b at an elevated temperature," which raises new matter. The Examiner has alleged that nowhere in the specification do the inventors describe or support such claimed limitation.

Paragraph 25 of the Application has been amended to include the following statement: "In another embodiment, the step of applying a voltage across adjacent bitlines or wordlines occurs at an elevated temperature." This statement does not introduce new subject matter in that this statement was included in claims 9 and 11-12 of the Application, as originally filed. In establishing a disclosure, an applicant may rely not only on the description and drawing as filed but also on the original claims. MPEP § 608.01(l). The amendments to the specification have accommodated this rejection for claims 9 and 11-12. Reconsideration and withdrawal of the 35 U.S.C. § 112, first paragraph, rejection is respectfully requested.

Rejections under 35 U.S.C. § 102

Claim 13 has been rejected as being anticipated by Mo et al., U.S. Patent No. 5,956,279 ("Mo patent"). Applicants respectfully traverse this rejection. Based on the remarks set forth below, Applicants respectfully request that this rejection be reconsidered and withdrawn.

The Mo patent discloses a testing circuit to cycle memory cells by providing a current to word or bit lines connected to the memory cells. The Mo patent discloses a testing circuit that provides sufficient current to drive multiple word or bit lines to exercise memory cells. The Mo patent does not disclose that different voltages are applied across adjacent word or bit lines. Nor, does the Mo patent disclose that voltages across adjacent word or bit lines will be greater than typical operational levels.

The testing circuit disclosed in the Mo patent seeks to apply a voltage across multiple word or bit lines, such that the current on those word or bit lines is sufficient to properly exercise memory cells (i.e., test if the memory cells work for their normal purpose). The current flowing through two adjacent bit lines will be approximately the same as the operational current, assuming a similar resistance to the adjacent bit or word lines. Thus, the voltage difference across two word or bit lines that are under test will be approximately zero.

The only place where a voltage difference will exist is across a bit or word line that is under test and a bit or word line that is not under test. Since the purpose of the testing circuit in the Mo patent is only to provide sufficient current to operate the memory cells normally, the voltage difference across adjacent word or bit lines under test and those not under test is likely to be equal to or less than the operational voltage. In any case, the Mo patent does not disclose that the voltage difference should be larger than the operational supply voltage.

Thus, the Mo patent does not teach a test circuit that applies a voltage difference across a plurality of adjacent bitline pairs and/or wordline pairs of the

SRAM array, the voltage being larger than an operational supply voltage as is disclosed in claim 13 of the present invention.

Specifically, claim 13 recites:

A semiconductor wafer having one or more die with a static random access memory (SRAM) array integrated therein, comprising:
a test circuit integrated with the SRAM array; and
connections that couple said test circuit to the SRAM array;
wherein during probing, said test circuit applies a voltage difference across a plurality of adjacent bitline pairs and/or wordline pairs of the SRAM array, the voltage being larger than an operational supply voltage for the SRAM array, to thereby induce failure of metal stringers or defects.

Thus, Applicants respectfully submit that the Mo patent does not disclose or suggest each and every element in claim 13. A claim is anticipated only if each and every element set forth in the claim is found in a single prior art reference. MPEP § 2131. For at least the reasons stated above, claim 13 is patentable over the Mo patent. Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 13.

Rejections under 35 U.S.C. § 103

The Examiner has rejected claims 1-8 as being unpatentable under 35 U.S. C. § 103(a) as being unpatentable over Mo et al., U.S. Patent No. 5,956,279 ("Mo patent"). Applicants respectfully traverse this rejection. Based on the remarks set forth below, Applicants respectfully request that this rejection be reconsidered and withdrawn.

As discussed above in the remarks related to the rejection under 35 U.S.C. § 102, the Mo patent does not disclose nor does it teach applying a different voltage across adjacent bit lines or word lines. In fact, the objective of the Mo patent is to maintain a sufficient current on bit and word lines to properly test the memory cells.

The Mo patent does not indicate that currents on the bit and word lines under test would vary, thus suggesting that the voltages across adjacent bit and word lines should be the same given that the resistance of the bit and word lines should - by design - be approximately equal. In particular, the Mo patent refers to "the supply voltage" being applied to selected memory cells. (Mo patent at column 2, line 51) The Mo patent does not refer to multiple voltage levels being applied to different memory cells, bit lines or word lines. Furthermore, FIG. 3 of the Mo patent suggests that a voltage level of Vcc is applied to all word lines or bit lines under test. As a result, not only does the Mo patent not teach each and every element of the present invention, but it teaches away from the present invention by suggesting that adjacent bit and word lines will be at the same voltage level.

Applicants respectfully submit that the Mo patent does not suggest each and every element in claim 1. In fact, the Mo patent presents a method that teaches away from the present invention. For at least the reasons stated above, claim 1 is patentable over the Mo patent. Applicants respectfully request that the Examiner reconsider and withdraw the rejection of claim 1.

Because each dependent claim incorporates all of the elements of the independent claim from which it depends, as well as additional features, claims 2-8, which depend upon claim 1 are also patentable over the prior art of record.

The Examiner has rejected claims 9-12 as being unpatentable under 35 U.S. C. § 103(a) as being unpatentable over Mo et al., U.S. Patent No. 5,956,279 ("Mo patent") in view of McClure, U.S. Patent No. 5,619,462 ("McClure patent").

Applicants respectfully traverse this rejection. Based on the remarks set forth below,

Applicants respectfully request that this rejection be reconsidered and withdrawn.

In rejecting these claims, the Examiner has relied upon the Mo patent to support the position that claim 1 is not patentable over the Mo patent. The Examiner relies upon the McClure patent to support the position that the step of performing step b at an elevated temperature is disclosed in the McClure patent. As shown above, claim 1 is non-obvious and patentable over the Mo patent. Moreover, the McClure patent fails to teach or suggest the above-described shortcomings of the Mo patent. Since each of claim 9-12 depends on claim 1, and because each dependent claim incorporates all of the elements of the independent claim from which it depends, as well as additional features, claims 9-12 are also patentable over the prior art of record for at least the above described reasons. Applicants respectfully traverse this rejection. Applicants respectfully request that this rejection be reconsidered and withdrawn.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Donald J. Featherstone
Attorney for Applicants
Registration No. 33,876

Date: 3/20/03

1100 New York Avenue, N.W.
Suite 600
Washington, D.C. 20005-3934
(202) 371-2600